

ASSESSMENT APPROACHES IN VIRTUAL LEARNING

Azam RASTGOO
Yousef NAMVAR
Islamic Azad University,
Ardabil Branch, IRAN

ABSTRACT

Today, the traditional assessment methods are not enough for measuring students' ability. Internet and its technologies have a strong impact to change it and there are some new ways to measure students' ability and knowledge. This article identifies some assessment methods and tools in online education and describes findings that show the importance of online assessment and online technologies. It also describes some advantages and disadvantages of new methods of assessment. Additionally this article review some valuable effects of using new methods such as e-portfolios, online self and peer-assessment in providing in time and good feedback for student, increasing students' participation, improving students learning achievement and increasing their abilities in this area.

Keywords: ssessment, Virtual learning, E-portfolio, online self and peer assessment

INTRODUCTION

Student's assessment is defined as "the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (Palombra & Banta, 1999).

Assessment is a part of learning process. It plays a powerful role in student's lives and is used for a number of purposes including individual certification, improvement of teaching and feedback on quality of teach (Peterson & Irving, 2008).Anderson, Ball and Murphy (1975) provide a classical description of assessment. They believe that assessment focuses upon a number of variables judged to be important and utilize a number of techniques to assay them. According to this description, assessment strategy is not limited to a single measurement, such as a selected response test but consist of a system of multiple measurements that include diverse assessment tasks (p. 27).One of the most useful impacts of assessment is learning improvement and it can makes students to be accountable, and also it can change student's attitudes toward assessment.

Student's belief about assessment especially online assessment in which it is a part of learning and even can make by themselves and their peer or by their teachers, never can be a threat for them. However, research about student's preferences for alternative assessment such as e-portfolios, projects, online self and peer-assessment, shows that the assessment that have been positively evaluated by students were more authentic and made learning more realistic or powerful (Bloxham & Wset, 2004).

Some researchers found that the students wanted honest, comprehensible and constructive feedback on how to improve their learning (Pajares & Graham, 1998).

ASSESSMENT IN ONLINE ENVIRONMENT

Assessment is more important in online environment without face to face interaction. The rapid development of internet technologies in the last decade reflects a dramatic shift for the educational practice (Seal & Przasnyksi, 2001).

In Web-Based Learning, Instructors Develop Assessment via The Internet

Only putting materials on website by teacher isn't enough without an evaluation system, the teacher cannot understand how students get, read, review and understand the materials. With assessment system teachers can give constructive feedback to students and improve the learning process and encourage progress. Distance education should not be viewed as another means of accessing the same materials and methods used to present a traditional course. Online technologies have great learning potential and go well beyond content of an online course (Rovai, 2000). In a distance learning environments, instructors lack direct access to verbal and nonverbal feedback from their students. This feedback enables the teacher in a conventional learning environment to use verbal and nonverbal signals to adjust the instructional process in real-time, in order to meet their student's needs.

In a synchronous distance learning environment the instructor frequently stops teaching in order to ask students whether they understood the content. In the absence of direct verbal and nonverbal feedback, the instructor relies on student's accurate self-reports of content comprehension in order to decide whether to repeat content or continue with the next unit (Offir, Barth, Lev, & Shteinbok, 2003). The student participates in those activities and submits answers to the instructor for further evaluation and grading. After the student's submission is evaluated, the instructor sends timely and constructive feedback to the student. Furthermore, student evaluation can be used for revising the existing activities or creating new activities (Born, 2003).

Web-Based Assessments Provide A Way to Administer, Grade And Record A Test Via The Internet

This assessment save teacher's precious time and provides flexibilities of time and place. Web-based assessment systems need to be looked at only as a tool to grade the students for certification purposes. The same system can be used as a feedback mechanism to learners and the given grades as feedback to the instructor and course coordinator for remedial action (Kandan, 2000). In web-based learning environment - students knowing they will be assessed-read, write, and engage in dialogue with each other. This process ideally results in learning which can be assessed by the instructor (Dennen, 2007). Web environment allow students to explore their learning without the restriction of time and place.

ADVANTAGES AND DISADVANTAGES OF ASSESSMENT IN ONLINE ENVIRONMENT

Some advantages of assessment in online environment are such these: Taking test become flexible in terms of place and time, feedback provided with expectations, it reduces costs of printing and copying, students can assess their knowledge as frequently as they need (Born, 2003). Despite many advantages, web based assessment have a few disadvantages such as:

- Preparing test is time consuming,
- Technology investment including hardware, software, and training could be costly to an educational institution.
- An instructor does not have control of testing environment where students are allowed to take a test anytime and anywhere. Disconnecting is a big problem while taking a test (Born, 2003).

ASSESSMENT TOOLS E-PORTFOLIO

Using portfolios in virtual education has obtained great importance in recent years. An e-portfolio is a collection of realistic and diversified evidence of student learning. Furthermore, an e-portfolio represents the demonstration and reflection of personal learning processes and results within a time period (Chang, 2008). E-portfolio appeared as a pedagogical strategy based on monitoring student competencies in order to accredit learning (Kankaanranta, Barrett, & Hartnell-Young, 2001). In education, e-portfolio is recognized as being a technological tool that allows the student to manage their learning experience. Simultaneously, it helps teachers to observe student's work and their processes of learning during a period of time (Lopez-Fernandez & Rodriguez-Illera, 2010). It refers to a private virtual space which contains a collection of digital products to demonstrate competencies in a field of knowledge to a teacher, a colleague, a professional or a community (Lopez-Fernandez & Rodriguez-Illera, 2010).

The main goal of e-portfolio is increase learning by giving feedback. This innovation helps students to manage their learning outcomes, to select audiences to achieve standards and to digitally produce a more enriched learning experience (Lopez-Fernandez & Rodriguez-Illera, 2010). E-portfolio can enhance student's self-managing, self-awareness of the educative objects during the course whether achieved or not. The introduction of internet technology has reduced the limits of traditional paper-based portfolios substantially and expanded portfolio functions. For these, improvements include, for instances, increased storage space, facility for multimedia presentations and user interaction and convenient access to internet (consortium, 2003). Dennis, Hardy and White (2006) proposed that a web portfolio is analogous to a plenteous online museum, providing a platform for students to save and display their learning results. It is also a convenient tool for teachers checking student's achievements and providing online feedback. Furthermore a web portfolio can improve the quality of teaching and learning. According to result of Lopez-Fernandez and Rodriguez-Illera research (2010) using of e-portfolio, increase student's self management, self-responsibility in learning process as lifelong and life wide learners. This study shows that e-portfolio led to increase positive attitudes and self-efficacy in relation to students' learning. According to conclusion of Change's study (2008) web-based portfolio, has no significant influence on student achievement, but has significant and positive influence on self perceived learning performance. Some studies showed portfolio impact on improving self-assessment and setting achievement goals (Barrett, 2000), cultivation student self-improvement and self-evaluation ability (Ou, 2004), improving self-reflection ability, promoting peer-communication (Lee, Multiple teaching assessment, 1999), improving work quality, promoting peer interaction (Chang C. C., 2001b; Kuo, Educational test and assessment, 2004; Popham, 2002), developing student self-evaluation ability and growth, including active learning, and setting learning goals (Chan, 2004). The key to e-portfolios is not how to create an e-portfolios or multimedia presentation, but to collect evidence of professional development (McCloughlin & Luca, 2006).

ONLINE SELF AND PEER-ASSESSMENT

Peer-assessment has been defined as an arrangement in which individuals consider the amount level, value, worth, quality, or success of the learning products or outcomes of their peer with similar status (Topping, 1998; Topping, Smith, Swanson, & Elliot, 2000). Self and peer assessment refer to those activities of learners in which they judge and evaluate their own products of work and their peers with similar backgrounds. Both of them emphasize students' active participation in the evaluation process (Sung, Chang, Chiou, & Hou, 2005). The implementation of peer assessment, an alternative way of assessment for teachers, receives much attention in recent years due to its effectiveness for students learning (Topping K. J., 1998).

This new assessment and learning strategy, helps students to plan their own learning, identifying their own strengths and weakness, develop metacognitive and professional transferable skills, and enhance their reflective thinking and problem solving abilities during the learning experience (Sluijsmans, Dochy, & Moerkerke, 1999; Smith, Cooper, & Lancaster, 2002; Topping K. J., 1998). He also increases student's interpersonal relationship in the classroom. Topping (1998) found peer assessment as a reliable and valid method for evaluation and teaching. The validity of peer assessment is often a major concern for educators. Topping (1998) reviewed the application of peer assessment in various subjects of higher education from 1980 to 1996. The survey studies indicate high correlation between peer assessment grading and teacher assessment. It shows high validity of peer assessment. Peer feedback seems to be an important factor in improving writing skills and learning achievement (Topping, Smith, Swanson, & Elliot, 2000; Plutsky & Wilson, 2004). Specific and critical peer feedback may greatly facilitate students improving their writing skills and learning achievement (Lin, Liu, & Yuan, 2001). Xiao and Lucking (2008) found that the students in experimental group had greater improvement in their writing than those in control group and also students in experimental group represent a higher level of satisfaction with peer assessment method. In traditional assessment, teachers usually play major role. In contrast, self and peer assessment require that students execute the assessment of their learning results and those of their counterparts. These two methods allow students to actively participate in the assessment and also provide them with opportunities to observe their own as well as their peer's works. Also two process nurturing self-monitoring and regulation among students (Sung, Chang, Chiou, & Hou, 2005). Numerous researchers have perceived the usefulness of online peer assessment; studies by Tsai, lin and Yuan (2002); Tsai, Liu, Lin and Yuan (2001); Rada and Hu (2001b) and Kwok and Ma (1999) confirm efficacy of this method, relevant studies supported the usage of web based or online peer assessment.

CONCLUSION

Assessment is an integral part of an education system and need considerable time and energy of teachers but with using new computer technologies, for designing, administrating and scoring, teachers can save their time and concentrate more on teaching and learning process, although, new technologies has their own advantages and disadvantages, and teachers can not limited themselves only to one type of assessment method but teachers should apply and use synthesis of different ways of assessment and testing such as using e-portfolio, online self and peer assessment and performance based assessment.

Traditional tests and assessment is just good for testing knowledge and performance; and skill assessment is often impossible with these tests. In recent years there has been a more emphasize on testing performance and skills rather than knowledge. Schacter et al (1999) found that current methods of assessment cannot discover problem solving process and what happen in it (Schacter, Herl, Chung, Dennis, O'Neil, & Jr, 1999). They rarely report student's thinking. Online assessment such as e-portfolio and online self and peer assessment provides a viable means for reporting both performance and thinking process data.

BIODATA and CONTACT ADDRESSES of AUTHORS



Azam RASTGOO received B.A. degree on educational science in 2001 from Tabriz University and M.A. degree on educational science in 2004 from Teacher Training University. Currently she is PhD student of Islamic Azad University, Research and Science Branch, Tehran, IRAN. she is also a faculty member at Islamic Azad University, Ardabil Branch.

Azam RASTGOO

PhD student, Islamic Azad University, Research and Science Branch, Tehran, IRAN.

Lecturer in Islamic Azad University, Ardabil Branch, IRAN.

Phone: +98-0-451-3365831,

Email: rastgoo20@yahoo.com



Yousef NAMVAR received B.A. degree on educational science in 2002 from Buali Sina University , M.A. degree on educational science in 2004 from Teacher Training University and PhD degree on educational science in 2008 from Islamic Azad University, Research and Science Branch, Tehran, IRAN.

Yousef NAMVAR

Lecturer in Islamic Azad University, Ardabil Branch, IRAN.

Phone: +98-0-451-3365831,

Email: yosefy650@yahoo.com

REFERERCES

Anderson, S., Ball, S., & Murphy, R. (1975). *Encyclopedia of educational evaluation*. San Francisco: Jossey-Bass.

Bloxham, S., & Wset, A. (2004). Understanding the rules of the game: Marking peer assessment as a medium for developing students' conception of assessment. *Assessment & Evaluation in Higher Education* , 39 (6), 721-733.

Chang, C. C. (2001b). A study on the evaluation and effectiveness analysis of web-based learning portfolio (WBLP). *British Journal of Educational Technology* , 32 (4), 435-458.

Chang, C. C. (2008). Enhancing self perceived effects using web-based portfolio assessment. *Computers in human Behavior* , 24, 1753-1771.

Consortium, e.-p. (2003). *electronic portfolio white paper*. Retrieved 12 30, 2006, from <http://eportconsortium.org>

- Dennen, V. P. (2007). Looking for evidence of learning: Assessment and analysis methods for online discourse. *Computers in Human Behavior*.
- Dennis, C., Hardy, J., & White, P. (2006). Development of a model to advance the uptake of e-portfolios for undergraduates in teacher education and registered nurse preparation: An exemplar of best practice. *Proceedings of Ed-Media* (pp. 248-253). Norfolk, VA: AACE.
- Kandan, M. (2000). Web based assessment system for IT course: A new perspective. USA.
- Kankaanranta, M., Barrett, H. C., & Hartnell-Young, E. (2001). Exploring the use of electronic portfolios in international contexts. *World conference on educational multimedia, Hypermedia and telecommunications* (pp. 874-876). Norfolk, VA: AACE.
- Kuo, S. Y. (2004). *Educational test and assessment*. Taipei: Chin-Hau.
- Kwok, R. C., & Ma, J. (1999). Use of a group support system for collaborative assessment. *Computers and Education*, 32, 109-125.
- Lee, K. C. (1999). *Multiple teaching assessment*. Taipei: Shin-Lee.
- Lin, S. S., Liu, E. Z., & Yuan, S. M. (2001). Web-based peer assessment: Feedback for students with various thinking-styles. *Journal of Computer Assisted Learning* 17, 420-432.
- Lopez-Fernandez, O., & Rodriguez-Illera, J. L. (2010). Investigating university students' adaption to a digital learner course portfolio. *Computers & Education*, 52, 608-616.
- McCloughlin, C., & Luca, J. (2006). Best practice in online assessment: Principles, process and outcomes. In E. Pearson, & Bohman (Ed.), *Proceedings of Ed-Media* (pp. 2375-2382). Norfolk, VA: AACE.
- Offir, B., Barth, I., Lev, Y., & Shteinbok, A. (2003). Teacher-student interactions and learning outcomes in a distance learning environment. *Internet and Higher Education*, 6, 65-75.
- Ou, C. H. (2004). *Educational test and assessment*. Taipei: Shin-Lee.
- Pajares, M. F., & Graham, L. (1998). Formalist thinking and language arts instruction: Teacher's and student's beliefs about truth and caring in the teaching conversation. *Teaching & Teacher Education*, 14 (8), 855-870.
- Palombra, C., & Banta, T. (1999). *Assessment essentials: Planning implementing and improving assessment in higher education*. San Francisco, CA: Jossey-Bass.
- Peterson, E. R., & Irving, S. E. (2008). Secondary school students' conceptions of assessment and feedback. *learning and Instruction*, 18 (3), 238-250.
- Plutsky, S., & Wilson, B. A. (2004). Comparison of the three methods for teaching and evaluating writing: A quasi-experimental study. *The Delta Pi Epsilon Journal*, 46 (1), 50-61.
- Popham, W. J. (2002). *Classroom assessment: What teachers need to know*. Boston, MA: Allyn and Bacon.

Rada, R., & Hu, K. (2001b). Patterns in student-student commenting. *IEEE Transactions on Education*, 44, 246-251.

RRovai, A. P. (2000). Online and traditional assessments: What is the difference? *Internet and Higher Education*, 3, 141-151.

Schacter, J., Herl, H. E., Chung, G. K., Dennis, R. A., O'Neil, H. F., & Jr. (1999). Computer-based performance assessments: A solution to the narrow measurement and reporting of problem-solving. *Computers in Human Behavior*, 15, 403-418.

Seal, K. C., & Przasnyksi, Z. H. (2001). Using the world wide web for teaching improvement. *Computers and Education*, 36, 33-40.

Sluijsmans, D., Dochy, F., & Moerkerke, G. (1999). Creating a learning environment by using self-, peer- and co-assessment. *Learning Environment Research*, 1, 293-319.

Smith, H., Cooper, A., & Lancaster, L. (2002). Improving the quality of undergraduate peer assessment: A case study from psychology. *Innovations in education and teaching international*, 39, 71-81.

Sung, Y. T., Chang, K. E., Chiou, S. K., & Hou, H. T. (2005). The design and application of a web-based self- and peer-assessment system. *Computers & Education*, 45, 187-202.

Topping, K. J. (1998). Peer assessment between students in colleges and universities. *Review of Educational Research*, 68, 249-276.

Topping, K., Smith, F. F., Swanson, I., & Elliot, A. (2000). Formative peer assessment of academic writing between postgraduate students. *Assessment and Evaluation in Higher Education*, 25 (2), 149-169.

Tsai, C. C., Lin, S. S., & Yuan, S. M. (2002). Developing science activities through a networked peer assessment system. *Computers and Education*, 38, 241-252.

Tsai, C. C., Liu, E. Z., Lin, S. S., & Yuan, S. M. (2001). A network peer assessment system based on a Vee heuristic. *Innovations in Education and Training International*, 220-230.

Xiao, Y., & Lucking, R. (2008). The impact of two types of peer assessment on students' performance and satisfaction within a Wiki environment. *Internet and Higher Education*.